CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	1999
DateRun:	07/01/1999
Experimenters:	Jason Marshall, Nicole Vayo
ClientType:	Consultant
ProjectNumber:	Project #1
Substrates:	Ceramics, Alumina
PartType:	Part
Contaminants:	Alcohol
Cleaning Methods:	Immersion/Soak
Analytical Methods:	Gravimetric
Purpose:	To evaluate several aqueous cleaners for the removal of the PVA.
Experimental Procedure:	Seven cleaners were selected based on vendor information and the lab's Effective Test Conditions Database. One cleaner was not available for testing and will be evaluated at a later date. Water was selected as the control. Cleaners were made into 2% solutions using DI water in 600 mL beakers. Twenty-one coupons were weighed prior to cleaning. Three coupons were cleaned in each solution for five minutes using stir-bar agitation. Parts were rinsed for two minutes in DI water at room temperature. The parts were dried in a convection oven at 212 oF for 15 minutes. After allowing parts to cool to room temperature, final weights were recorded. If weights did not change, the cleaner would be retested at a 5% solution with new coupons. If weights went down, the cleaner would be used in the next phase of testing. SUBSTRATE MATERIAL: Ceramic-Alumina parts CONTAMINANTS: DuPont Evanol (Vinyl Alcohol Polymers & Copolymers CAS#s: 9002-89-5, 25213-24-5, 54626-91-4; Methanol Bulk/Packaged CAS #: 67-56-1; Sodium Acetate CAS#: 127-09-3)
Results:	All products tested at the 2% concentration caused the weights to be decreased. Table 2 lists the weight loss from cleaning. No 5% testing was needed. Table 2. Weight Changes

Cleaner	Initial wt	Final wt	Weight Loss
Chem Tech			
	6.032	6.0067	-0.0253
	4.5664	4.5588	-0.0076
	4.7086	4.7024	-0.0062
Innovative Organics			
	4.7252	4.7108	-0.0144
	6.011	5.9788	-0.0322
	5.9213	5.8826	-0.0387
Oakite Products			
	5.9538	5.9237	-0.0301
	6.0661	6.0363	-0.0298
	6.0823	6.0579	-0.0244
SWR Corp			
	6.1238	6.0986	-0.0252
	6.1125	6.0893	-0.0232
	6.1165	6.0917	-0.0248
Alconox			
	4.708	4.6956	-0.0124
	4.7336	4.7161	-0.0175
	5.0734	5.0599	-0.0135
International Products			
	5.2555	5.2437	-0.0118
	4.7178	4.7029	-0.0149
	5.164	5.1534	-0.0106
Water			

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	6.0584	6.033	-0.0254
	6.0725	6.0486	-0.0239
	6.0212	5.9996	-0.0216

Summary:

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Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Chemical Technologies	Green Thunder	2		☑	
Innovative Organics Inc	Amberclean SC 11	2		☑	
Oakite Products	Inproclean 3800	2		☑	
SWR Corporation	SWR One	2		☑	
Alconox Inc	Luminox	2		☑	
International Products Corporation	Micro 90 Conc.	2		☑	
Gemtek Products	SC Aircraft & Metal Cleaner Super Concentrate	2		☑	
Water	Water	100		☑	

Conclusion: All solutions tested decreased the weight of the parts. Further evaluation will proceed with all selected cleaners.